PATENT ABSTRACTS OF JAPAN

(11)Publication number:

02-063115

(43)Date of publication of application: 02.03.1990

(51)Int.CI. H01L 21/20 H01L 21/205

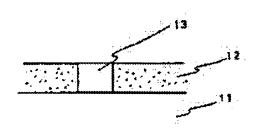
(21)Application number : 63-215535 (71)Applicant : NEC CORP

(22)Date of filing: 29.08.1988 (72)Inventor: ISHIDA KOICHI

(54) SELECTIVE GROWTH OF THIN FILM

(57)Abstract:

PURPOSE: To sharply reduce a lattice defect density at the upper part of a selective epitaxial growth layer by a method wherein a thin film is grown in such a way that a ratio of a height to a width of a groove satisfies a specific condition. CONSTITUTION: SiO2 12 with a film thickness of (h) is grown on a (100) Si substrate 11 by thermal oxidation; then, a square window part where a <110> direction is used as one side of a length (w) is formed in an SiO2 mask material by a dry etching operation. Then, the substrate is installed in a low-pressure MOCVD apparatus so as to obtain h>w $\tan \theta$; the surface of Si exposed on the bottom of the window part is cleaned in AsH3 which has been diluted by H2; then, GaAs 13 is grown selectively in the window part in an atomic-layer growth mode by using diethyl gallium chloride (DEGaA) and AsH3 as raw materials.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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